

CLAIMS

1. A method of potentiating or enhancing the toxic effect of a cytotoxin or an oxidizing agent on a cancer cell, comprising:
 - (A) contacting the cell with an oligonucleotide complementary to a gene selected from the group consisting of Xeroderma pigmentosum group A (XPA), Xeroderma pigmentosum group G (XPG), Cockayne syndrome group A (CSA), and Cockayne syndrome group B (CSB);
 - (B) contacting the cell with a toxic amount of an cytotoxin selected from the group consisting of cisplatin and oxaliplatin, or with a toxic amount of an oxidizing agent selected from the group consisting of ionizing radiation and hydrogen peroxide,

the toxic effect of the cytotoxin or oxidizing agent on the contacted cell being potentiated or enhanced after cellular contact with the oligonucleotide.
2. The method of claim 1, wherein the cytotoxin is cisplatin.
3. The method of claim 1, wherein the cytotoxin is oxaliplatin.
4. The method of claim 1, wherein the oxidizing agent is gamma radiation.
5. The method of claim 1, wherein the oxidizing agent is hydrogen peroxide.
6. The method of claim 1, wherein cell is contacted with an oligonucleotide directed to the CSB gene.
7. The method of claim 6, wherein the oligonucleotide is directed to the coding region of the CSB gene.
8. The method of claim 7, wherein the oligonucleotide has a nucleotide sequence selected from the group consisting of SEQ ID NOS:1 and 2.

9. The method of claim 8, wherein the oligonucleotide has phosphorothioate internucleotide linkages.
10. The method of claim 1, wherein the oligonucleotide is directed to the XPA gene.
11. The method of claim 10, wherein the oligonucleotide is directed to the coding region of the XPA gene.
12. The method of claim 11, wherein the oligonucleotide has SEQ ID NO:3.
13. The method of claim 12, wherein the oligonucleotide has phosphorothioate internucleotide linkages.
14. The method of claim 10, wherein the oligonucleotide is directed to the 3'-untranslated region of the XPA gene.
15. The method of claim 14, wherein the oligonucleotide has SEQ ID NO:4.
16. The method of claim 15, wherein the oligonucleotide has phosphorothioate internucleotide linkages.
17. The method of claim 1, wherein the oligonucleotide is directed to XPG.
18. The method of claim 1, wherein the oligonucleotide is directed to CSA.
19. The method of claim 1, wherein the cell is a carcinoma cell.
20. The method of claim 19, wherein the carcinoma cell is selected from the group consisting of ovarian, breast, and colon carcinoma cells.

21. A method of sensitizing a resistant cell to a cytotoxin or an oxidizing agent, comprising:
- (A) contacting the cell with an oligonucleotide complementary to a gene selected from the group consisting of Xeroderma pigmentosum group A (XPA), Xeroderma pigmentosum group G (XPG), Cockayne syndrome group A (CSA), and Cockayne syndrome group B (CSB);
- (B) contacting the cell with a cytotoxin selected from the group consisting of cisplatin and oxaliplatin, or with an oxidizing agent selected from the group consisting of ionizing radiation and hydrogen peroxide,
- the cell being contacted with an amount of cytotoxin or oxidizing agent that is cytotoxic to a non-resistant cell,
- the contacted cell being less resistant to the cytotoxin or oxidizing agent after contact with the oligonucleotide.
22. The method of claim 21, wherein the cytotoxin is cisplatin.
23. The method of claim 21, wherein the cytotoxin is oxaliplatin.
24. The method of claim 21, wherein the oxidizing agent is gamma radiation.
25. The method of claim 21, wherein the oxidizing agent is hydrogen peroxide.
26. The method of claim 21, wherein cell is contacted with an oligonucleotide directed to the CSB gene.
27. The method of claim 26, wherein the oligonucleotide is directed to the coding region of the CSB gene.
28. The method of claim 27, wherein the oligonucleotide has a nucleotide sequence selected from the group consisting of SEQ ID NOS:1 and 2.

29. The method of claim 28, wherein the oligonucleotide has phosphorothioate internucleotide linkages.
30. The method of claim 21, wherein the oligonucleotide is directed to the XPA gene.
31. The method of claim 30, wherein the oligonucleotide is directed to the coding region of the XPA gene.
32. The method of claim 31, wherein the oligonucleotide has SEQ ID NO:3.
33. The method of claim 32, wherein the oligonucleotide has phosphorothioate internucleotide linkages.
34. The method of claim 30, wherein the oligonucleotide is directed to the 3'-untranslated region of the XPA gene.
35. The method of claim 34, wherein the oligonucleotide has SEQ ID NO:4.
36. The method of claim 35, wherein the oligonucleotide has phosphorothioate internucleotide linkages.
37. The method of claim 21, wherein the oligonucleotide is directed to XPG.
38. The method of claim 21, wherein the oligonucleotide is directed to CSA.
39. The method of claim 21, wherein the cell is a carcinoma cell.
40. The method of claim 39, wherein the carcinoma cell is an ovarian, breast or colon carcinoma cell.
41. A method of reducing the proliferation rate of a carcinoma cell, comprising contacting the cell with an oligonucleotide complementary to the Cockayne syndrome group B (CSB) gene.
42. The method of claim 42, wherein the oligonucleotide is directed to the coding region of the CSB gene.

43. The method of claim 42, wherein the oligonucleotide has a nucleotide sequence selected from the group consisting of SEQ ID NOS:1 and 2.
44. The method of claim 43, wherein the oligonucleotide has phosphorothioate internucleotide linkages.
45. An oligonucleotide complementary to a gene encoding Xeroderma pigmentosum group A (XPA), the oligonucleotide having 20 to 50 nucleotides, and comprising SEQ ID NO:4 or SEQ ID NO:5.
46. The oligonucleotide of claim 45 having phosphorothioate internucleotide linkages.
47. An oligonucleotide complementary to a gene encoding Cockayne syndrome group B (CSB), the oligonucleotide having 20 to 50 nucleotides, and comprising SEQ ID NO:1 or SEQ ID NO:2.
48. The oligonucleotide of claim 47 having phosphorothioate internucleotide linkages.
49. A method of potentiating or enhancing the toxic effect of a cytotoxin or an oxidizing agent on a cancer cell, comprising contacting the cell with an oligonucleotide complementary to a gene involved in TCR and NER and contacting the cell with a toxic amount of a cytotoxin or an oxidizing agent.